IS-9

Canal and Ditch Turnouts Capacity in CFS

HEAD - FT	Pipe Diameter in Inches 8"	10"	12"	15"	18"	21"	24"
1.0	1.3	1.8	The flow rate for this shaded area is indeterminate.				
1.5	1.8	2.7	3.6	5.0			
2.0	2.2	3.3	4.5	6.6	8.8	11.0	
2.5	2.5	3.8	5.3	7.9	10.8	13.9	17.0
3.0	2.8	4.3	6.0	9.0	12.5	16.3	20.3
3.5	3.1	4.7	6.6	10.0	14.0	18.4	23.1
4.0	3.3	5.1	7.2	10.9	15.3	20.3	25.7

NOTES:

1. HEAD - Distance from the invert (bottom) of the entrance of the pipe to the water surface in the canal or ditch

2. The pipe is assumed to be 10 feet long, level, and have an "n" value of 0.017

3. The centerline of the outlet of the pipe is assumed to be at the level of the field.

4. The yellow zone of the chart represents a velocity of 7 fps or greater. This is important for considerations to reduce erosion.

Example: A 12" diameter turnout with 3.0 feet of head will flow about 6.0 cfs. The velocity of the water is in the yellow zone and erosion protection measures should be considered.

Reference: USDA-NRCS Hydraulic Formula - Culverts

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